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## Flat Tailed Probability Distribution

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## Flat tailed probability distribution

Changes in global financial markets

Speed - gains in technology.

Derivatives: Pricing + Hedging

Financial markets more efficient

Financial Market Stability:

Market Dynamics have to

Strengthened

Limit Potential Crisis

Key: Maintain liquidity of underlying markets

Baring's PLC: NOT compromised underlying Japanese  
markets

Sound Risks: Liquidity

Capacity of Markets to Absorb Shocks

Concentration of

July 1993 - group of 30's

20 Recommendations

Measuring & Controlling risk

Risk management - Limit on risk taking

Limit of Statistical Models

Value of risk: maximum loss for position

Maximum Loss

Calculating Value at Risk:

factor structure

Individual Instrument decomposed:

Correlation - How much of the part is relevant to  
market. today

Potential:

Counterparty at default -

Violation

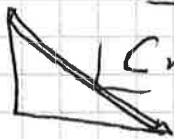
Fat tailed distribution

Mathematical tractability

bought

↔ at a high price

Correlation among factors



Critical Importance of leverage judgements

Stress tests

Critical test: judging market liquidity

liquidity  $\left\{ \begin{array}{l} \text{stock} \\ \text{flow} \end{array} \right\}$

1994 - Large losses in

How much  
did the  
Fed's QE & PDI  
push in during  
34-48 hrs after  
decided / Brinks  
Broke

Cleaner + Settlement  
Processes:

Default in  
Settlement  
System

A ☐ Same day Funds =

Federal Funds,  
Fed Wire,

Cross Border Settlement

BIS, etc

Actual Security

Banking accounting system

Transfer without actual security

Payment delivery to payment

Certificates, physical delivery

Revise (8,97 uniform commercial code)

to  
sac-nt  
G.

Let us not quit the BB game

So

## Shocks MACRO-PRUDENTIAL F

MACRO-ECONOMIC SHOCKS

MANAGING - MONETARY

15 MINUTES

EORIGIN: Financial System is more vulnerable) DAMAGE FROM LOW probability events strike

Context: Single ~~institution~~ event

1 Context problem

↳ Complex Structure Complexity  
↳ Intra currency transactions

Derivatives  $\Delta$  too much credit  
to, much blame  
mortgage instruments  
new instruments  
↳ runs in countries

Episodes: potential

16% instruments in 8% market

leverage

Market Illiquidity

Solvent Risk

Doubling the 'bet'

Industry & Authorities

DERIVATIVES POLICY GROUP

1 Over the counter counter derivatives

2

3 capital + capital at risk calculation

4 Counterparty relationships

(Costs are great if risk can fail)

Best practice + Disclosure

Transparency

plumbing  
is crucial  
1) Same Day - payment  
2) Gross Profit  
3) Detailed Credit  
Risk

Akio Nagashima = liquidity in inter central Banking shocks  
 globalization } adverse impact of  
 financial innovation } globalization  
 } stable market price level  
 } goal  
 } → liquidity

5 points: growing and derivative  
 → an environment

BBA:

two page booklet

Role of Government in U.S. Economy

The Wizard of Oz as a parable  
 for the gold standard

how far is the yellow brick  
 road (the gold standard) led to  
 Emerald City (a false utopia)

500

Transmission of  
interest

Exchange rate

Central Bank Intervention

effectiveness  
in monetary policy

not affected by  
 derivative

Hodson: existence of derivative → decrease in volatility

liquidity + openness

low account traders

electronic markets vs open market org

Salesmen not customer

Should Customers

Accurate

Singular + Solo

HARMONIZE.

Guardian

8:40 AM

# New - Innovative Instruments - Derivative

① Exchange Based Contracts.

② Over the Counter contracts

## Innovative Products

Contract | Request for quote,  
negotiate  
Deal Struck

Trade bid on the counter

institutional sized block  
credit guarantee  
+ public outcry

## Balanced Budget Amendment

Monetary History  
Senior Civil  
War:  
HIGHLY  
STYLIZED

## Balance Sheet

Liab | Asset

Educational  
System

## Credit enhancement / Credit Enhancement

Hanson

Cal. Pers. Emp. Pension

Modest User of Derivatives

Puts / Puts

Innovative  
Exotic  
Instruments  
gears

Cler  
Substitution Oct '87

7 billion Downside

Deferred Compensation  
in S.B.A. 500

Exposure, restructured



End User Wants What is needed

Demand

Prices

Simulation

Instruments as alternatives to stock + bonds

Selling options:

Buyer PELS

Buy Security

→ converted into common stock



# Systemic Risk:

RISK MANAGEMENT

Real effects

MARKET ACCIDENT

SYSTEMIC Risk - Self Regulation by Participants

Ludwig  
Lawyer

Ludwig  
Reading

OCC Conference

① unexpected event  $\rightarrow$  puts financial system at risk

② Events  $\rightarrow$  series of events  $\rightarrow$  large scale declines

- 1929-33 Runs

\_\_\_\_\_ Rare + highly localized

Independent risk management function

## Stiglitz on Systemic Risk

3 reasons

systemic risk -

$$\frac{dLNP}{dR} < 0$$



Problems in GNDR

Information Capital in Economy

1) Information Capital of the Economy

2) Information in one  $\rightarrow$  information in another

Short Run effect

RISK AVERSION

Consume Interest, Investor Confidence

2) Well functioning Capital Markets

Monitors is a Public Good

Labeling Standards

DERIVATIVES in market is fixed

Hedging function is real benefit  
@ same time

Enhance leverage enhance speculation

Increased leverage  $\rightarrow \frac{dV}{dE} / 1$  is low

Modigliani  
Miller  $\rightarrow$

no effect on market value  
hide information

Two stage profit  
determination

① determining  $\pi_1$   
Aggregate  $\pi$

② determining  
| distributing  $\pi$  to  
| various firms

No big to fail

Systemic Risks

U.S.F.C.

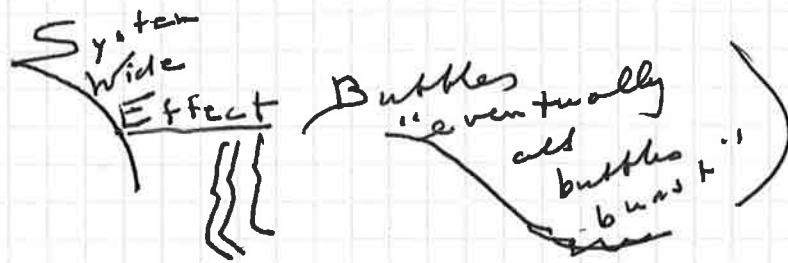
a) Transparency

b)

TRANSPARENCY

[Single firm

[System at large



Accounting Rules

Regulation  
Wide Spread Insurance

(S & L) own: Lack of Capital Regulation  
Capital Mand. Title Refs

Rule 1370 capital.

Regulatory Measurement of Capital

Regulatory

G.A.L.

3 ways

①: Book Value of Performing Mortgage

②: Defensive Loan Loss as asset

③: Origination Income as income

consequence of  
deregulation

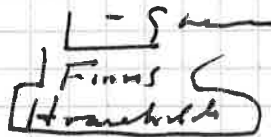
Asset

Asset

Creative Accounting

## Primer for Systemic Risk

Financially fragile - Business  
- Household



### Measure of Financial Fragility

- Speed
- Difficulty of observing
- Quick transmission

Investors in financial markets →

~~transmit~~ taxpayers liability

for execution risk

Cost to taxpayers

assessment

{ taxpayers stand behind }

{ private loss bearers }

UNPERCEIVED DETERIORATION

Deterioration Risk  
→ emergence of  
financial fragility

out of  
control  
financial  
structure

conflicts

under  
fail safe

→ contingent  
claim reverts  
product decisions

explosion risk  
Brilliant Dist

{ Exposure to deterioration }